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Efficient Synthesis of Anion Receptors Based on the Phenoxathiin Macrocycle

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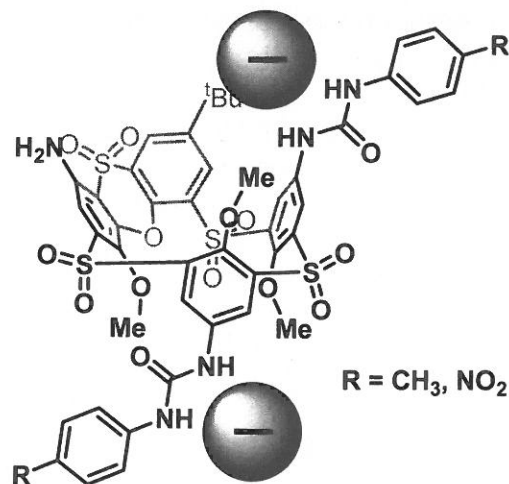
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Thiacalixarenes are macrocyclic compounds that are widely used in supramolecular chemistry. The main advantage of their skeleton is the possibility of its simple modifications.¹ Being one of the easily accessible derivatives, phenoxathiin macrocycle is interesting due to its inherent chirality.² However, wider utilization of this novel compound is problematic because of the lack of effective derivatization techniques.³

We present the first and very efficient way how to introduce the amino groups to the upper rim of the macrocycle. It was performed by using the *ipso*-nitration of the fully S-oxidized macrocycle followed by selective reduction of nitro groups. The structures of most of the products were confirmed by X-ray crystallography of monocrystals.

Resulting amino derivative was further reacted with two selected isocyanates, providing the ureido-type receptors (Scheme 1). Their abilities to complex common anions were measured by NMR titration and unexpectedly high association constants were observed in all cases.



Scheme 1

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1 Kumar, R.; Lee, Y. O.; Bhalla, V.; Kumar, M.; Kim, J. S. *Chem. Soc. Rev.* **2014**, *43*, 4824.

2 Polívková, K.; Šimánová, M.; Budka, J.; Cuřínová, P.; Císařová, I.; Lhoták, P. *Tet. Lett.* **2009**, *50*, 6347.

3 Vrzal, L.; Kratochvílová-Šimánová, M.; Landovský, T.; Polívková, K.; Budka, J.; Dvořáková, H.; Lhoták, P. *Org. Biomol. Chem.* **2015**, *13*, 9610.